

What is Claimed Is:

1. A device for passing a flexible elongated element through a portion of a subject, said device comprising:

structure for retaining said flexible elongated element; and

advancement means for longitudinally advancing said flexible elongated element from a proximal end of said device toward a distal end of said device with sufficient force to pass said flexible elongated element through the portion of the subject;

wherein said advancement means include at least one drive wheel for contacting said flexible elongated element, and further wherein said at least one drive wheel contains a peripheral groove therein for receiving said flexible elongated element so as to provide increased contact area between said at least one drive wheel and said flexible elongated element.

2. A device according to claim 1 wherein said peripheral groove of said at least one drive wheel is configured in a v-shaped groove.

3. A device according to claim 1 wherein said peripheral groove is configured in an arc-shaped groove.

4. A device according to claim 3 wherein said arc-shaped groove is a portion of a hypothetical circle having a diameter slightly greater than a diameter of said flexible elongated element.

5. A device according to claim 1 further comprising a follower wheel corresponding to said at least one drive wheel.

6. A device according to claim 5 wherein said follower wheel contains a peripheral groove therein corresponding to said peripheral groove of said at least one drive wheel.

7. A device according to claim 1 wherein said at least one drive wheel contains additional peripheral grooves of differing sizes so as to accommodate differing sizes of said flexible elongated element.

8. A device according to claim 5 wherein said follower wheel contains additional peripheral grooves of differing sizes so as to accommodate differing sizes of said flexible elongated element.

9. A device according to claim 5 wherein each of said follower wheel and said at least one drive wheel are power driven.

10. A device for passing a flexible elongated element through a portion of a subject, said device comprising:

structure for retaining said flexible elongated element; and

advancement means for longitudinally advancing said flexible elongated element from a proximal end of said device toward a distal end of said device with

sufficient force to pass said flexible elongated element through the portion of the subject;

wherein said advancement means include opposed roller-driven belts.

11. A device according to claim 10 wherein said opposed roller-driven belts are positioned adjacent to said distal end of said device so as to pull said flexible elongated element through said device rather than pushing said flexible elongated device therethrough.

12. A device according to claim 10 wherein at least one of said opposed roller-driven belts contains a groove therein for receiving said flexible elongated element so as to provide increased contact area between said at least one of said opposed roller-driven belts and said flexible elongated element.

13. A device according to claim 12 wherein said groove of said at least one of said opposed roller-driven belts is configured in a v-shaped groove.

14. A device according to claim 12 wherein said groove is configured in an arc-shaped groove.

15. A device according to claim 14 wherein said arc-shaped groove is a portion of a hypothetical circle having a diameter slightly greater than a diameter of said flexible elongated element.

16. A device according to claim 12 wherein said at least one of said opposed roller-driven belts contains additional grooves of differing sizes so as to accommodate differing sizes of said flexible elongated element.

17. A device according to claim 12 wherein said at least one of said opposed roller-driven belts is provided with a flat wire-engaging surface.

18. A device for passing a flexible elongated element through a portion of a subject, said device comprising:

structure for retaining said flexible elongated element; and

advancement means for longitudinally advancing said flexible elongated element from a proximal end of said device toward a distal end of said device with sufficient force to pass said flexible element through the portion of the subject;

wherein said advancement means include at least one roller-driven belt attachment means for attaching said flexible elongated element to said at least one roller-driven belt, and separation means for separating said flexible elongated element from said at least one roller-driven belt.

19. A device according to claim 18 wherein said at least one roller-driven belt of said advancement means comprises opposed roller-driven belts.

20. A device according to claim 18 wherein said attachment means comprises an adhesive.

21. A device according to claim 18 wherein said separation means comprises a blade for stripping said flexible elongated element from said at least one roller-driven belt.

22. A device according to claim 21 wherein said blade is positioned at said distal end of said device, adjacent to said at least one roller-driven belt.

23. A device according to claim 18 further comprising a pair of lengthwise expanding ribs extending along the outer surface of at least one of said roller-driven belt so as to guide said flexible elongated element along a center portion of said at least one roller driven belt.

24. A device according to claim 18 wherein said at least one roller driven belt consists of a carrier wire for attachment to said flexible elongated element.

25. A device for passing a flexible elongated element through a portion of a subject, said device comprising:

structure for retaining said flexible elongated element; and

advancement means for longitudinally advancing said flexible elongated element from a proximal end of

said device toward a distal end of said device with sufficient force to pass said flexible element through the portion of the subject;

wherein said advancement means include a roller-driven tube, said roller-driven tube being provided with a lengthwise endless slit and being of a size to house said flexible elongated element, and said advancement means further comprising separation means for separating said flexible elongated element from said roller-driven tube through said slit.

26. A device according to claim 25 wherein said separation means comprise a blade for separating said flexible elongated element from said roller-driven tube through said slit.

27. A device according to claim 26 wherein said blade is positioned at said distal end of said device adjacent to said roller-driven tube.

28. A device for passing a flexible elongated element through a portion of a subject, said device comprising:



structure for retaining said flexible elongated element;

advancement means for longitudinally advancing said flexible elongated element from a proximal end of said device toward a distal end of said device with sufficient force to pass said flexible element through the portion of the subject;

wherein said advancement means comprise a roller-driven strap configurable to pass around said flexible elongated element so as to longitudinally advance said flexible elongated element toward said distal end of said device, and rotate said flexible elongated element, as said roller-driven strap passes through a set of rollers.

29. A device for passing a flexible elongated element through a portion of a subject, said device comprising:

structure for retaining said flexible elongated element; and

advancement means for longitudinally advancing said flexible elongated element from a proximal end of said device toward a distal end of said device with

sufficient force to pass said flexible element through the portion of the subject;

wherein said advancement means comprise a driver configurable to carry said flexible elongated element toward said distal end of said device.

30. A device according to claim 28 wherein said driver comprises a rotatable rod having a spiral groove therein, said flexible elongated element being positionable within said spiral groove, and a stationary rigid sleeve being disposed around said driver to cover said spiral groove and confine said flexible elongated element so as to move said flexible elongated element toward said distal end of said device as said driver is rotated within said stationary rigid sleeve.

31. A device according to claim 28 wherein said driver comprises a rotatable rod being covered with an elastomeric tube, said flexible elongated element being spirally positionable on said elastomeric tube, and a sleeve being disposed around said driver to cover said spirally positioned flexible elongated element as to

move said flexible toward said distal end of said device as said driver is rotated within said sleeve.

32. A device according to claim 29 further comprising an inlet for receiving said flexible elongated element from said spiral groove, a guide tube being positioned adjacent to said outlet so as to direct and support said flexible elongated element discharged from said spiral groove.

33. A device according to claim 31 wherein said driver is positioned adjacent to said distal end of said device.

34. A device according to claim 29 wherein a pre-determined quantity of said flexible elongated element is spirally configurable in said spiral groove of said driver so as to dispense only said pre-determined quantity.